

**FINAL**

# **IMPROVING COST RECOVERY FOR WATER PROVISION**

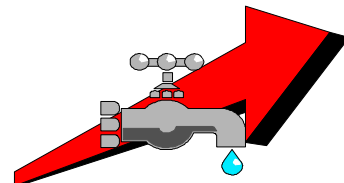
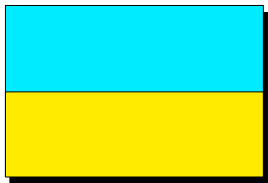
## **VOLUME III MANUAL FOR IMPROVING COST RECOVERY**

Prepared for  
**Government of Ukraine**  
and  
**Vodokanal, City of Lviv, Ukraine**



Prepared by  
**PADCO, Inc.**

Contract No. CCS-0008-C-00-2057-00, TO 57  
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## ***ACKNOWLEDGMENTS***

*In preparing this report, the team gratefully acknowledges the assistance of the following persons and organizations:*

*Lviv Vodokanal, Director Mykola S. Odukha  
City of Lviv, Mayor Kuybida Vsail  
USAID/PADCO Lviv Resident Advisor, Michael Sinclair*

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## PREFACE

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**Planning and Development Collaborative International** (PADCO, Inc.) prepared this manual for the United States Agency for International Development (USAID) and the Government of Ukraine under the Shelter Sector Reform Program for the Newly Independent States.<sup>1</sup> It is the third report in a four-volume series on “Improving Cost Recovery for Water Provision.”<sup>2</sup>

This manual, *Improving Cost Recovery*, is designed to support a proposed training and technical assistance activity, whose purpose will be to help local officials in Ukraine provide water services in a more financially sustainable manner.<sup>3</sup> We designed the manual to serve as the primary training material for the introductory workshop/seminar of that activity. The manual’s purpose is to help local officials design an overall strategy for improving cost recovery for water service provision in their locales. The manual contains *explanatory text*, *worksheets* to be completed by workshop participants, as well as *case studies* that illustrate particular points. Case studies are drawn mostly from USAID/PADCO’s recent work in Lviv under this assignment (Task Order 57).

The manual is divided into Chapters; each Chapter corresponds to one workshop session. Chapters are as follows:

- *Introduction* explains the objectives of the introductory workshop/seminar;
- *Chapter 1* helps officials develop an overview of the provision of water service in their locale;
- *Chapter 2* assists participants assess the performance of their user charge cost recovery system; and
- *Chapter 3* helps officials shape their strategies for improving cost recovery.

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<sup>1</sup> USAID/PADCO Contract No. CCS-0008-C-00-2057-00, Task Order 57.

<sup>2</sup> See Volume I of this series, *Pricing Process*, for Terms of Reference (Appendix A).

<sup>3</sup> For a discussion of the proposed training and technical assistance activity, see *Volume IV: Final Report*.

## INTRODUCTION TO WORKSHOP/SEMINAR: “A STRATEGY FOR MAKING WATER SERVICE MORE FINANCIALLY SUSTAINABLE”

**Question:** *What is the purpose of this introductory workshop/seminar?*

**Answer:** *To help participants analyze their local situation and develop a strategy for making the provision of water service more financially sustainable. We then plan to help participants implement specific parts of their strategies through further technical assistance.*

**Question:** *What does it mean for water service to be “financially sustainable”?*

**Answer:** *This means that service providers can provide adequate water service to customers on an ongoing basis. Service providers will have access to sufficient revenues to operate and maintain, and renew and replace, the existing system. This involves paying all bills on time, paying indirect administrative costs, etc. Service providers will also be able to gradually extend and expand the system to meet growing demand. An important part of making the service financially sustainable is to fully recover the costs involved in providing service.*

**Question:** *What is “full cost recovery”?*

**Answer:** *Cost recovery means that the users of water pay for the full, true costs of providing water on a sustainable basis. It involves the principal that “the user pays.” Costs are recovered largely or exclusively through user charges.*

**Question:** *What is a “strategy”?*

**Answer:** *A strategy is the approach that a person or organization takes to meet a goal, such as providing better service to customers. It involves understanding the current situation and setting goals and objectives. It then entails figuring out the steps that the organization needs to take, to get from the current situation to the desired future state. To succeed, strategies then must be vigorously implemented.*

# CHAPTER 1

## FINANCING WATER SERVICE

---

*By the end of this session, participants should have a better understanding of:*  
*(1) the roles that different organizations play in providing water service in their locale;*  
*(2) the interactions between those different organizations; and*  
*(3) the charges those organizations levy to finance water service.*

To understand how water services are provided in your locale, below we look at: (1) responsibilities and (2) sources of revenue.

### 1.1 RESPONSIBILITIES

#### 1.1.1 Background

Responsibilities for directly providing water service vary from locale to locale in Ukraine. Understanding these responsibilities in your city is an important first step in making service provision more financially sustainable.

Vodokanals play important roles in most locations. A 1991 law established vodokanals (VKLs) as legally independent state-owned enterprises in charge of operating and maintaining water and wastewater.<sup>4</sup> The Local Self Government Act of 1992 transferred responsibility for municipal services, including water and wastewater, to local governments.<sup>5</sup> Thus in many locations, VKLs provide most water services, with local governments supervising the VKLs and perhaps also providing some aspects of water service. Yet this pattern does not exist everywhere. In some locations, state enterprises may provide water and wastewater services (e.g., Donetsk, where the state mining enterprise provides those services), while in other locales, oblasts (rather than cities) may supervise VKLs (e.g., Dnipropetrovsk, Kharkiv).<sup>6</sup>

We can divide direct responsibilities for providing water service into three different areas: (1) operations and maintenance, (2) system renewal and replacement, and (3) system extension and expansion. These terms are defined as follows:

- *Operations* — using the water system to supply water on a day-to-day basis.
- *Maintenance and repair* — maintaining and repairing the water system on a routine basis so that a given component will continue to serve throughout its expected useful life. Maintenance and repair is *not* expected to extend the useful life of the component.
- *System renewal* — renewing a component usually involves replacing some major part of the equipment. Renewal does extend the useful life of the component.

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<sup>4</sup> Law of Ukraine, *On Enterprises of Ukraine*, No. 887-12 of 3/27/19. See Stottman, Walter, *Ukraine Water and Wastewater Sector Study*, World Bank, Draft, May 1995, p. 11.

<sup>5</sup> Decree of 12 March 1994. See *ibid*, p. 11.

<sup>6</sup> *Ibid*.



- *System replacement* — replacing a piece of equipment by another component of about the same capacity. This generally occurs after the old component wears out, i.e., at the end of its useful life.
- *System extension* — extending service to new customers. This does not involve increasing the capacity of the system.
- *System expansion* — expanding the capacity of the system, by increasing the capacity of individual components (e.g., pipes, pumping stations) or else adding new water sources to the system.

To give a simple example, we can apply these terms to a shoe. *Operating* the shoe means simply to put the shoe on, tie the shoelace, and wear it. *Maintaining* the shoe means to keep it shined and to replace the shoelace when it breaks. These actions *do not* extend the useful life of the shoe. *Renewing* the shoe means to replace the sole when it wears out. This type of action *does* extend the useful life of the shoe. *Replacing* the shoe means to buy another shoe of the same size when the old one wears out. *Extending* the use of the shoe might mean that we allow more people to wear it, and *expanding* the shoe supply might involve increasing the number of shoes available in your closet, or else replacing a small shoe with a larger one.

### 1.1.2 Describing Your Situation

To begin to analyze service provision in your area, fill out Worksheet 1, below.

<b>Worksheet 1: Areas of Responsibility</b>			
<i>Who is responsible for the following activities in your area? (Put 'x' in appropriate boxes.)</i>			
<b>Area of Responsibility</b>	<b>VKL</b>	<b>City</b>	<b>Other (list)</b>
1. Operations and maintenance			
2. System renewal and replacement			
3. System extension and expansion			
<i>What are the legal bases for these responsibilities?</i> 1. _____ 2. _____ 3. _____			

(Note: Please fill out this and the following worksheets as completely as possible. Leave what you don't know blank at present, and complete later.)

Mini-Case Study 1 shows a partial analysis of responsibilities in Lviv.

### **Mini-Case Study 1: Areas of Responsibility in Lviv**

*A study team analyzed areas of responsibility in Lviv for providing water services. The team found that the Vodokanal was responsible in practice not only for operations and maintenance, but also for renewal and replacement of the existing system. The basis for this conclusion was as follows. First, the City of Lviv had transferred responsibility for major parts of the system to the VKL. Second, the VKL was allowed to include "depreciation" as an element of its total costs of service provision. (See Cabinet of Ministers, "Main Statements on the Production Cost Estimations for the Industrial Enterprises and Organizations," No. 759.) Depreciation is calculated to provide for replacement of capital items. Third, interviews corroborated the above analysis.*

Related to areas of responsibility is the ownership of assets. Use Worksheet 2 to describe asset ownership in your locale.

### **Workshop 2: Ownership of Assets**

*Describe the types of system components owned by each of the following organizations:*

**VKL:** \_\_\_\_\_

**Local Government:** \_\_\_\_\_

**Other** \_\_\_\_\_ :

*Cite the legal bases for this situation:* \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### **1.1.3 Beginning to Analyze Your Situation**

*Looking at the worksheets above, are there any areas where responsibilities are not clearly defined or overlap? Which?*

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(Note: A more complete analysis of responsibilities would involve looking at *indirect* as well as direct responsibilities for water provision. One could examine, for example, the role of oblasts in activities such as approving rate changes. Participants could also try to reach agreement on what a better institutional arrangement would look like in the long term, and then define steps to achieve that goal.)

## 1.2 SOURCES OF REVENUE

### 1.2.1 Background

To fulfill their different responsibilities, service providers receive revenues from different sources. Most or all of the costs of providing service are generally recovered through **user charges**. These are charges related in some way to use of the service. Service providers may also receive some revenues from other sources. A municipality, for example, may fund some capital investments out of their general revenues.

There are four different types of water use charge that are generally recognized. Of those four types, two are periodic (monthly) user charges, while the others are one-time (lump-sum) charges. The four types are:

- *Monthly volume charge.* This charge is based on the amount of water consumed. The rate is set per cubic meter, and usually involves metering water use.
- *Monthly service charge.* This charge pays for costs associated with billing, customer service, administration, etc. These charges are fixed and do not vary depending on the volume of water consumed. Where this charge is levied, it is typically included along with the volume charge in one monthly bill.
- *Lump-sum connection ( "hook-up" ) charge.* This charge is typically determined by the capital cost of infrastructure that will service an area. These costs are typically shared among properties in that area.
- *Lump-sum development charge.* This charge is typically determined by the capital cost of infrastructure that will service an area. These costs are typically shared among properties in that area.

For a given charge to be properly considered a water use charge, the monies generated from the revenue source should be applied to the costs of providing water service. Other types of charges related to water use are less generally recognized and accepted.

### 1.2.2 Describing Your Situation

For each entity that directly provides water services in your locale, determine the different types of charges that they levy that relate to water provision. Then, using the definitions provided above, figure out what type of charge it is. Use Worksheet 3, below.

**Worksheet 3: User Charges**

<b>Name of Entity:</b> _____			
<b>Type of Charge or Other Source</b>	<b>Name of Charge</b>	<b>Legal Grounding</b>	<b>Revenues Generated in ____ (Year)</b>
<b>Monthly volume</b>	1. _____ 2. _____	_____ _____	_____ _____
<b>Monthly service</b>	1. _____ 2. _____	_____ _____	_____ _____
<b>Lump-sum connection</b>	1. _____ 2. _____	_____ _____	_____ _____
<b>Lump-sum development</b>	1. _____ 2. _____	_____ _____	_____ _____
<b>Other (describe)</b> _____	1. _____ 2. _____	_____ _____	_____ _____

(Note: Municipalities that directly provide some water services may draw on their general revenues for that purpose, rather than rely on user charges. Describe that situation under "Other.")

Now, list the amount of money spent by each entity on water provision in the most recent year.  
Year: \_\_\_\_\_.

_____
_____
_____

**1.2.3 Beginning to Analyze Your Situation**

By filling out the above worksheet, you will have developed a good picture of the way water service is financed in your locale. We can now start to analyze the strengths and weaknesses of this situation.

A coherent model for financing water service sustainably could include one example of each of the four types of user charge. Charges would be dedicated exclusively to improving the water system. Charges would be set at levels sufficient to fund the activities that correspond to each charge. For example, revenues generated by the connection charge would pay for all costs associated with hooking up new customers, etc. While our ideal financial model would include

other sources of revenue as appropriate, e.g., general municipal revenues, the model would be grounded on user charges.

Many local models for financing water service fall short of this ideal. Here are some possible problems:

- *Duplicate charges.* There is more than one example of a certain type of charge in your locale. This situation may occur particularly where more than one entity is involved in directly providing water service.
- *Charge not well grounded legally.* The legal basis of a charge may be in question.
- *Charge does not generate sufficient revenues for providing related service.* A charge may not be set at high enough levels to pay for the corresponding service. For example, a connection charge may not pay for all the direct and indirect costs of hooking up new customers. In an extreme case, analysts speak of a “nuisance” tax or charge that generates such low levels of revenue that it merely clutters up the financial picture without doing any real good.
- *Revenues from charges not dedicated to water/wastewater service provision.* This is a major problem: revenues are collected from water use-related charges, but the funds generated do not help in providing water service.

Based on the above, use Worksheet 4 to describe the strengths and weaknesses of the model for financing water provision in your locale.

***Worksheet 4: Strengths and Weaknesses in Financing Water Service in \_\_\_\_\_***

*Strengths:* \_\_\_\_\_

*Weaknesses:* \_\_\_\_\_

For an example analysis, see Mini-Case Study 2, below.

**Mini-Case Study 2: Financing the Provision of Water Service in Lviv**

*In Lviv, a study team found that the Vodokanal levied two user charges — a monthly volume charge and a lump-sum connection charge. The City also levied four or five charges related to water use. While the City's charges offered many of the elements of a sustainable system of water finance, they did not add up to a coherent system. Some of the problems identified included: the City's charges were not dedicated or restricted to water service provision; both the City and the Vodokanal charged a type of lump-sum connection charge (duplicate charging); the City levied one or two "nuisance" charges; and the City levied one charge whose legal base required further investigation. We also noted that the Vodokanal did not charge a flat monthly service charge, but instead covered associated costs through their monthly volume charge — a minor equity problem.*

**1.2.4 Further Work/Discussion**

The above analysis raises some interesting questions that could be pursued further. If the present model for financing water service in your locale is not perfect, what should the model look like in the long term? What are the constraints that prevent achieving that goal? Which constraints can be addressed locally, and which would require changes in the national legal framework? What steps in the short term and medium term would lead to improvements in the financial model?

While this analysis is probably too involved for now, jot down below any ideas you have for pragmatic, immediate steps that can be taken locally to improve the system of water finance:

**Worksheet 5:**

**Immediate Steps for Improving Model for Financing Water Service in:** \_\_\_\_\_

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## CHAPTER 2

### ANALYZING COST RECOVERY

*By the end of this session, participants should have determined the major strengths and weaknesses in their user charge cost recovery systems.*

While the previous Chapter looked at all different types of user charges, this Chapter focuses on monthly user charges. Monthly charges usually serve as the foundation for a model for financing water services.

#### User Charge Cost Recovery System

Recovering costs from monthly user charges is a process involving several steps. The major steps are:

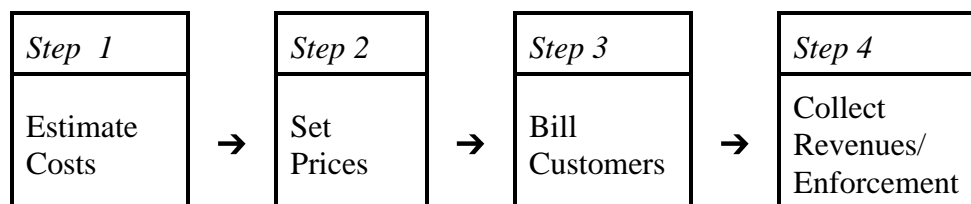
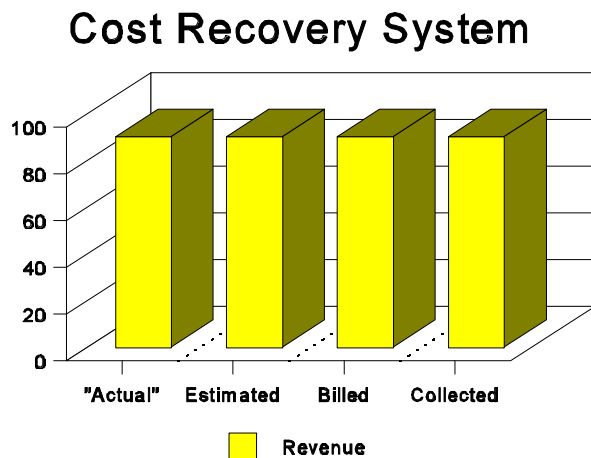


Figure 9.1



These steps are normally performed by different departments of a vodokanal. In Lviv, for example, the Economic Planning Department estimates costs and proposes prices for approval by Lviv Oblast. The Water Sales Department bills customers, while revenues are collected largely through the banking system.

For each step in the user charge cost recovery system, we can calculate a corresponding level of revenues. This is shown in Figure 2.1. "Estimated costs" corresponds to Steps 1 and 2; "Billed revenues" relates to Step 3, while "Collected revenues" corresponds to Step 4. One can develop an

"outside" estimate of "actual costs" to compare with the vodokanal's own estimate of costs.

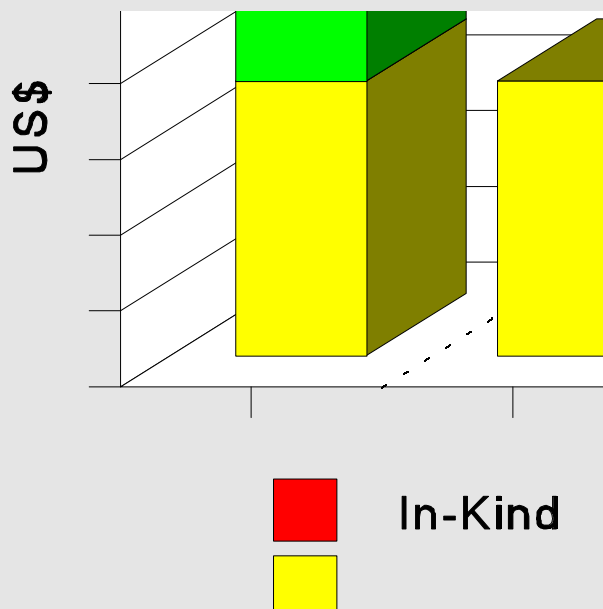
In an ideal situation, all four of these amounts will be equal, i.e., of the same height as shown in Figure 2.1. That is:

$$\text{"actual" costs} = \text{estimated costs} = \text{amount billed} = \text{amount collected}$$

Few water providers, unfortunately, fully meet this goal. Instead, cost estimates may not completely reflect actual costs. Customers may not be billed at full prices, or customers may not pay for the full amount billed. As a result, the graph of such a situation would look more like a descending staircase (see Mini-Case Study 3, for example). Applying this model to a water authority helps us diagnose where any specific problem lies in the system.

### **Mini-Case Study 3: Revenue Performance of Lviv Vodokanal**

USAID/PADCO helped Lviv Vodokanal gauge the performance of its user charge cost recovery system. For the month of April 1995, we determined that costs and revenues were as shown in the Figure below. (The "actual" costs shown in the Figure were based on the Vodokanal's estimate plus additional costs associated with providing sustainable service as determined by the project team.



Regarding this revenue performance one notes:

- the VKL only collected about 65% of total billed in April 1995. A substantial amount of those collections are "in-kind" payments, e.g., payments in industry products, such as lamps or chairs. If in-kind payments are excluded, the collection-to-billing ratio drops to 41%.
- The VKL's estimate of costs for a given month is only about half the estimate of the "actual" costs of providing sustainable service.

Based on this and other analyses, we helped the VKL shape a strategy for improving cost recovery (see Mini-Case Study 5).

To perform such an analysis in your locale, we first need to set a recent sample month to analyze (indicate sample month and year: \_\_\_\_\_). Then we proceed as follows for the four elements of the model:

"Actual" costs represent the full costs of providing service in a sustainable manner (see Introduction). If a VKL's estimate of costs are less than actual costs, that means that the VKL



will not be able to pay all its bills or will not sufficiently fund responsibilities such as renewal and replacement of the existing water distribution system. Actual costs are the most difficult item to compute in this analysis. They will be the subject of a separate exercise in this Workshop/Seminar.

*Estimated costs* are prepared for purposes of rate-setting. See Worksheet 6 to estimate costs for one month for your locale.

**Worksheet 6:**  
**Determining Estimated Costs**

*Estimated costs in Ukraine include production costs, what is referred to as "profit," as well as taxes and other obligatory payments. To determine total estimated costs for one month:*

**1) First indicate total production and depreciation costs allowed under Cabinet of Ministers Decree No. 759, "Main Statements on the Production Cost Strategy (Turnover) for Industrial Enterprises and Public Organizations" (10 November 1994), and express that in US dollars (US\$):**

$$\frac{\text{Total production \& depreciation costs}}{\text{Exchange rate (number of coupons equal to US\$ 1.00)}} = \text{ (A) }$$

**2) Second, calculate allowable "profit":**

$$\text{ (A) } \times 0.25 = \text{ (B) }$$

**3) Third, calculate value-added tax:**

$$\text{ (A) + (B) } \times 0.20 = \text{ (C) }$$

**4) Fourth, add any other obligatory payments (taxes and fees) =** \_\_\_\_\_  
**(D)**

**5) Fifth, calculate "Total Costs" = A + B + C + D =** \_\_\_\_\_  
**"Total Costs" (E)**

*(NOTE: The method for calculating "total costs" may differ in some Oblasts.  
If method is different in your Oblast, modify method accordingly.)*

*Amount billed.* This is the total amount billed during the sample month. This amount can be determined following Worksheet 7 below.

**Worksheet 7:**  
**Determining Amount Billed**

*The amount billed in a given month can be added up as follows:*

(A)	(B)	(C)	(B x C = D)
<u>Customer Class</u>	<u>Estimated Water Delivery (Cub. Meters)</u>	<u>Price per Cubic Meter (US\$)</u>	<u>Total Billed</u>
General population	_____	_____	_____
Communal services	_____	_____	_____
Enterprise/industry	_____	_____	_____
_____	_____	_____	_____
(other)			
<b>TOTAL</b>			_____

*NOTE: Worksheet should be adapted to local conditions, to reflect total amount billed for sample month.*

*Revenues collected.* These are the revenues collected that correspond to the sample month's billing. Because customers take different lengths of time to pay their bills, it is often hard to determine exactly collections that correspond to the sample billing month. If this information is not readily available, one can assume that the month *following* the sample billing month is the most representative month for collections. For example, if your sample month for estimated costs and amount billed is June, take July as your sample month for collections. Write down your sample month for collections here: \_\_\_\_\_.

You can further divide "revenues collected" into two amounts: "cash" revenues (defined here as revenues available in the bank) versus "in-kind" payments (i.e., bartered payments, often goods, such as tables, lamps, etc., produced by enterprise/industry customers). Use Worksheet 8 to list these amounts.

**Worksheet 8: Calculating Revenues Collected (US\$)**

Sample month: \_\_\_\_\_

(A) <u>Customer Class</u>	(B) <u>Cash Payments</u>	(C) <u>In-Kind Payments</u>	(D) <u>Subtotal</u>	(E) <u>% of Total</u>
General population	_____	+ _____ =	_____	_____
Communal services	_____	+ _____ =	_____	_____
Enterprise/industry	_____	+ _____ =	_____	_____
_____	_____	+ _____ =	_____	_____
(other)				
TOTAL	_____	+ _____ =	_____	<u>100%</u>

Note here whether estimates of the value of in-kind payments are provided by the customers, or whether they are prices that the receiver could actually command in the marketplace:

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Now that you have calculated all the elements of the cost recovery system, it is time to put them all together. Fill in Worksheet 9 below.

**Worksheet 9:**

**Performance of Cost Recovery System in:** \_\_\_\_\_

**Month/Year:** \_\_\_\_\_

*First fill out the spaces at the bottom of the Worksheet. Then draw the graph, using the figures provided above as examples.*



*"Actual" (from seminar handout on "Actual" Costs):* US\$ \_\_\_\_\_

*Estimated (from Worksheet 6, line (E)):* \_\_\_\_\_

*Billed (from Worksheet 7, Total from Column (D)):* \_\_\_\_\_

*Collected (from Worksheet 8):*

• *Cash (Total from Column B):* \_\_\_\_\_

• *In-Kind (Total from Column C):* \_\_\_\_\_

• *Total (Total from Column D):* \_\_\_\_\_

Before we start to interpret these results, let us look at collections a little more closely. By calculating the ratio of billings to collections for different customer classes, we can see how successfully service providers are collecting from those different groups of consumers. See Worksheet 10.

**Worksheet 10:**  
**Collection-to-Billing Ratio**

*First fill out the items below:*

(A)	(B)	(C)	(D)
Customer Class	Amount Billed (from Worksheet 7, Column D)	Amount Collected (from Worksheet 8, Column D)	Collection-to-Billing Ratio (C/B=D) (%)
General population	_____	_____	_____
Communal services	_____	_____	_____
Enterprise/industry	_____	_____	_____
_____	_____	_____	_____
(other)	_____	_____	_____
TOTAL	_____	_____	_____

*Now fill out the following graph, using percentages developed in Column D, above:*



Now that you have filled out Worksheets 9 and 10, we can begin to analyze the results. Mini-Case Study 3, above, offered some observations on performance of the user charge cost recovery system in Lviv. In a similar way, what do the results shown on Worksheet 9, above, say about problems and priorities in your locale? What about Worksheet 10? Which customer groups have the worst collection-to-billing ratios? Which have the best? Which customer group provides the most revenues (see Worksheet 8, Column E)? Write your preliminary conclusions in Worksheet 11, below. Write down further observations as results are discussed during the seminar.

## Worksheet 11:

### ***Conclusions Regarding Performance of User Charge Cost Recovery System in \_\_\_\_\_.***

This image shows a single sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

In the next Chapter, we will look at ways to convert these conclusions into a strategy for improving cost recovery.

## CHAPTER 3

### TOWARD A STRATEGY FOR IMPROVING COST RECOVERY

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*By the end of this session, each participant should have developed a draft strategy for improving cost recovery in their locale.*

The preceding sessions have helped us analyze the financing of water service. Now we are ready to start turning our findings into a strategy for improving service provision by increasing cost recovery.

Shaping such a strategy has several steps, discussed below: (1) defining the objectives, (2) determining the major elements, (3) putting the elements in an order that makes sense, (4) assigning responsibilities and targets, and (5) implementing the strategy.

#### 3.1 DEFINING OBJECTIVES

Defining objectives helps us to focus the direction of our strategies. Some managers report that the very *act* of thinking through objectives and articulating what one really wants to accomplish is as valuable as the *end product* — the list of objectives themselves.

Objectives can be either vague or precise or somewhere in between. An example of an acceptable but somewhat vague objective is: “The purpose of this strategy is to improve cost recovery.” A more precise objective might be: “The purpose is to help Vodokanal ‘X’ improve cost recovery to the extent that, by mid-1997, we can pay all operating expenses and begin to renew or replace five percent of all capital each year.” More precise objectives are generally better. In many cases, however, we simply do not have enough information to be completely precise. Very precise objectives in such situations are unrealistic and may even be counterproductive. In the process of defining objectives, one should generally begin with something vague, and push toward more and more precision as appropriate. If you define more than one statement, organize your statements from the general to the specific. “Goals” are your ultimate ends, while “objectives” are more specific ways to achieve those overall goals.

A final comment: defining objectives should be an ongoing, evolving process. After initially defining objectives and working through the rest of these worksheets, revisit your objectives. You may find you have developed a clearer idea of what your objectives should be. If so, by all means revise them.

In sharpening up your objectives, it may be helpful to ask yourself the following questions.

What do we want to accomplish? We can start out with general statements: “Improve the provision of water services.” “Make the provision of water services more financially sustainable.” “Improve cost recovery.” We can make these statements more specific. For example, *to what level* do we want to improve service provision? There may be a progressive series of steps. The first step might be simply to pay all our bills on time. A more difficult step might be to pay all bills *and* provide adequate funding for renewal and replacement of the

existing system. The most difficult step might be to pay all bills, fund renewal and replacement, *and* fund extension and expansion of the system. Think about how much can be accomplished realistically by improving cost recovery.

Not all objectives necessarily have to do with improving cost recovery. Related objectives, for example, could have to do with improving the equity or efficiency of the tariff-setting process. Improving relations between entities involved in the water sector could be another objective leading to better service provision.

By how much? It helps to consider whether we can measure progress toward achieving our objectives. Objectives are generally more useful if they can be measured. For example, we can measure progress toward a target, such as “improve cost recovery (the difference between actual costs and revenue generated through user charges) by 30% in two years.” If our objective is only to “improve cost recovery,” it is less clear what we want to accomplish, or how well we are achieving that objective.

Ratios often help us define what we want to accomplish. A useful cost recovery ratio, expressed as a percentage, is:

$$\frac{\text{monthly 'actual' costs}}{\text{monthly revenues generated}} \times 100$$

An increase in this ratio is good. If our cost recovery ratio goes up from 40% to 75%, we have an improved cost recovery. Another useful ratio might be the collection-to-billing ratio:

$$\frac{\text{monthly amount collected}}{\text{monthly amount billed}} \times 100$$

If this ratio increases, that means we are collecting more of the revenues we are billing for — a positive development.

Where? Who? By when? All these questions offer ways to make your statement of objectives more precise. “The ‘X’ Vodokanal,” “In the City of ‘Y,’” “By 1998” — all such items help us to be more precise. You may choose to set different objectives for different years.

Now use Worksheet 12 to begin to define your objectives.



### **Worksheet 12: Defining Objectives**

*Think through and write down in "bullet" form your initial thoughts about the objectives of your strategy:* \_\_\_\_\_

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*Now, combine those elements into one or several sentences:* \_\_\_\_\_

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*As you work through the rest of this exercise, you may find that you want to redefine your statement of objectives. If so, write out your revised statements below:* \_\_\_\_\_

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## **3.2 DETERMINING MAJOR ELEMENTS**

Strategies for improving cost recovery can contain one or several elements. The elements chosen should correspond to problems identified earlier dealing with cost recovery. Below, we briefly discuss several possible elements of a strategy.<sup>7</sup> You may think of others.

### **3.2.1 Increase Estimate of Total Costs**

Previous exercises may have revealed that internal estimates of costs are much lower than "actual" costs (see Worksheet 9). By definition, one cannot fully recover costs under such conditions. Thus, one element of a strategy could involve increasing the estimate of total costs so as to more fully reflect actual costs.

Where service providers have developed a capital investment program or something similar, we can estimate the costs of providing sustainable service with more precision. (This approach to tariff-setting, known as an "average incremental cost" approach, will be discussed in a later seminar session.)

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<sup>7</sup> As part of this technical assistance, we expect to offer additional training in most of the major areas presented below. Thus, here we provide merely an overview, with more detail to be provided later.

### 3.2.2 Improve Tariff-Setting Process

We could also improve the way in which water tariffs are set. A tariff-setting process in Ukraine typically involves two steps:

*Step 1.* Determine total and average costs of service.

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*Step 2.* Following State and Oblast guidelines, design pricing structure to recover costs.

A model pricing process, however, might involve three different steps:

*Step 1.* Determine costs to be covered by monthly charges.

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*Step 2.* Allocate costs to beneficiaries.

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*Step 3.* Design pricing structure to recover allocated costs.

Under the *model* process, costs are allocated to customer groups depending on the costs associated with serving those different beneficiaries. Under the *present* tariff-setting process, however, tariffs are set in part on perceived ability to pay — not on the costs of providing service. Enterprise/industry customers, for example, may be overcharged and forced to cross-subsidize other customer classes. Thus, improving the tariff-setting process may make water charges more *efficient* and *equitable*, and subsidies more transparent.

### 3.2.3 Improve User Charge Collection and Enforcement

Work completed earlier may have shown that collections should be improved (see Worksheet 9). Some different ways that collections can be increased include:

- notifying and then shutting off service for delinquent customers;
- requiring that meters be installed in all new buildings;
- establishing automatic payment procedures from the bank accounts of customers;
- reducing in-kind payments (we identified the magnitude of this problem in Worksheet 9);
- establishing new incentive systems for zheks and others to improve collection rates;

- changing collection procedures so as to reduce collection and administrative fees retained by banks and others;
- designing and implementing a system of fines; and
- establishing new billing, collection, and enforcement procedures for condominium associations.

Different approaches can be applied to different customer classes. We should focus on those customer classes where we expect the greatest potential gains (see Worksheets 7 and 10).

For a detailed example of cutting off service to delinquent customers as a strategy for improving cost recovery, see Case Study 4 below. The case study is set in Pittsburgh, Pennsylvania, USA. How is the situation in Pittsburgh different than in your locale? Are there any lessons from the Pittsburgh case that can be applied to your situation?

#### **Case Study 4: Collecting from Delinquent Customers in Pittsburgh, Penn., USA**

##### ***Part 1***

*Grey Tutsock, Associate Director for the City of Pittsburgh Water and Sewer Authority (PWSA), leaned back in his chair and stared at the ceiling. Tomorrow (3 April 1995) would be a very hectic day and he hoped his people were ready. The PWSA, which provided water to the citizens of Pittsburgh, was about to get tough on delinquent customers. Very tough. After years of not enforcing payment deadlines, and weeks of trying to reconcile differences, the PWSA was about to start cutting off water service for some customers. About 1,500 accounts were scheduled for termination in the upcoming week alone.*

*The PWSA was established in 1984 as an autonomous authority governed by a Board of Directors. They were charged with providing water and sewer service to customers in Pittsburgh, a city of about 370,000 people, a four-and-one-half hour drive west of Washington, D.C.*

*Between 1984 and 1989, the City had been responsible for collecting water bills from customers, not the PWSA itself. They then turned those funds over to the PWSA for operations. Collections had been lax during that period. High collection rates were not a high priority for City officials who did not have to administer the service. As a result, some customers had not paid for water service in years.*

*In 1989, the PWSA was given responsibility for collecting revenues itself. Armed with its new responsibilities, the PWSA slowly began to improve its revenue collection. In that year, however, the need was not pressing. Water was still fairly cheap. When more revenues were required, rates could be raised, as occurred every year or so. As a result, in 1989, the PWSA began to slowly improve collection among commercial and industrial customers, but put off trying to collect on delinquent residential customers — a potentially explosive issue — for another time.*

*In 1994, that time finally arrived. The price of water was on the rise. Instead of paying \$20.00 every quarter, as in years past, a typical resident might now be paying \$80.00 per quarter for water (the PWSA billed on a quarterly basis). In 1994, for the first year in recent memory, the PWSA had needed to raise rates two times — in January and again in October. What was worse, unless something was done quickly, the PWSA would need to raise rates again soon — in April 1995. Yet another rate hike would be politically unpopular. People at the PWSA began looking for other ways to come up with the needed money.*

*Someone happened to notice that, of the PWSA's 83,000 accounts, about 10% were "hard core" delinquent accounts. (The other 90% of customers generally paid their bills.) Further, some of the delinquents owed thousands of dollars in back payments. If the PWSA could substantially improve its collection rates, it might be able to delay its rate increase.*

*The PWSA thought it could collect on delinquent residents, but they knew it would be controversial. They put together some financial projections and a plan that conformed to the requirements set down by water regulatory bodies and other. In late 1994, they presented their proposal to the PWSA Board of Directors. In the presentation, officials emphasized that the PWSA didn't want to shut water off for anyone. That would help no one — neither the customers nor the PWSA. But to avoid yet another rate increase, the Authority needed to make a credible threat that it would cut off service to delinquent customers if absolutely necessary. The Board listened to all the arguments pro and con, then voted. They approved the plan. Now it was up to the PWSA to implement the plan.*

## **Part 2**

*The first week of 1995, Greg Tutsock and his staff got busy implementing the plan to collect from delinquent residential customers. First, they sent out about 9,000 letters to the so-called "hard core" delinquent customers. Most were property owners, while some were tenants who paid directly. A letter clearly informed the customer that he or she owed back payments had much they owed. It told the customer that he or she had until March 30 to "reconcile" his or her account. If the customer paid the balance owed in full before March 30, the customer would be entitled to a one-third reduction in the penalty and interest accrued on the debt. (this penalty and interest had accrued at a rate of 18% per year before January 1, 1995. Now under the new plan, it would continue to add up at a reduced rate of 9% per year.) If the customer did not reconcile his or her account by March 30, however, they would have to pay the balance plus the entire penalty and interest. Or else they would face a service cut-off.*

*After the letters went out, customers started to inquire about reconciling their accounts. "Reconciling their accounts" meant basically one of three things. As the first (1) and best option, customers would completely pay off the balance owed plus any penalty and interest owed. As a second (2) option, a customer could plead financial hardship. This involved coming in to the PWSA and filling out an application for financial hardship. After filling out the form, the applicant then met one-on-one with a customer service representative.*

*Together, they developed a plan for paying off the debt. The terms of the payment plan varied depending on the size of the debt and what the customer could afford to pay. The PWSA permitted slower pay-back for poorer customers; however, penalty and interest continued to accrue on the unpaid debt at the same rate regardless of customer income level. While some plans helped customers pay off their accumulated debt in as little as three months, periods of up to 20 years were necessary in other cases.*

*As a third (3) option for reconciling an account, a customer could claim to have a medical or emergency condition. Under those conditions, the PWSA would delay shutting off water service. Customers would have a 30-day grace period to find a solution. This grace period could be extended once, for another 30 days. After that point, the PWSA expected that customers with medical conditions would have set up satisfactory payment arrangements or else moved to another location.*

*By mid-March 1995, the staff (which had been given prior training in the new program) had reconciled 1,100 accounts. These accounts represented 12% of the 9,000 letters sent out in early January. Now the PWSA began sending out service termination notices to the remaining 7,900 accounts. Those notices were of two kinds. First (1), for most rental units, the PWSA sent 30-day termination notices. These were sent by both certified mail and regular mail to owners. Owners were given seven days to provide the names of tenants to the PWSA. After receiving those names, the PWSA notified tenants by mail of the impending shut-off. Second (2), for owner-occupied units and in cases where tenants were billed directly, the PWSA provided shorter 10-day termination notices.*

*If owners failed to provide the names of the rental unit tenants, PWSA workers personally visited those sites, to conduct a visual inspection and to put up notices on the property advising tenants. Beside letting people know about the upcoming service shut-off, the visits by PWSA workers were useful in another way. They allowed the Water and Sewer Authority to learn about abandoned properties and to otherwise improve the quality of its customer database.*

*At about this point, the PWSA began to seriously prepare to shut off water service for up to 7,900 customer accounts. The Authority sent out crews to visit the properties of delinquent accounts and to paint the curb stops of their water connections blue. Painting the curb stops blue would help later crews quickly find the lines and shut off service. The PWSA also began to hire additional security services to help customer service representatives deal with the irate customers expected.*

*Leaning back in his chair in early April, Greg Tutsock thought of the next day when service shut-offs would begin. The plan was aggressive. Of the 7,900 nonpaying accounts, the Authority was scheduled to shut off service for 1,500 units the first week alone. Twelve separate shut-off crews with guards were ready to roll. After the first week, the crews were scheduled to continue shutting off service at a rate of 500 units per week. And the campaign would not stop, but would continue on a sustained basis. During 1995 and on*

into the future, shut-offs would occur during the April-November water shut-off season. (Because some people use hot water to heat their units, no water can be shut off during winter months.) Greg tapped his desk thoughtfully with his pencil. What would tomorrow be like?

### **Part 3**

The next morning, on Monday, April 3, 1995, the PWSA began terminating water service. Twelve crews fanned out across the City. The PWSA had divided Pittsburgh into service zones. So as not to unfairly single out the residents of any one neighborhood, the PWSA had scheduled shut-offs for April 3 in virtually every zone in the City. Those who owed the most in each service zone were targeted for the first shut-offs. For each connection terminated, the PWSA added an additional \$35 charge — the estimated minimum cost of each visit — to that delinquent account.

As the crews got to work, people began pouring in to the PWSA offices. Working 70-hour weeks during the first weeks of the campaign, the 12 frantic customer service representatives and their supervisors saw 400-500 customers per day. Most of these people were poor: unemployed, on public assistance, or working at minimum-wage jobs. If persons scheduled for shut-off reconciled their accounts before termination, the staff called the crews by radio so they would not cut off service. If people reconciled their account after a cut-off, service was restored as quickly as possible. No additional charge was added for reconnection.

The campaign received heavy local news coverage and even some national exposure. The City and the PWSA were deluged with telephone calls. For every one negative phone call, officials reported about seven positive phone calls from customer who regularly paid their bills. "Why didn't you start doing this years ago?" was a typical comment. PWSA officials were only threatened twice. Once was by a delinquent customer who harassed officials by phone and in person. The PWSA eventually pressed charges against this individual. The other incident involved an 80-year-old woman armed with hedge clippers. This elderly woman on Social Security hadn't paid a water bill for years and now owed thousands of dollars. She didn't feel she ought to be required to pay. This was a sentiment voiced in one way or another by other nonpaying customers, who felt that water was a basic necessity that the Government should provide to the needy free of charge.

Top PWSA officials felt some political pressure to back off in certain cases, but this was reportedly minimal. Greg Tutsock attributed this low level of pressure to the near-universal recognition that the City was in a "dire financial situation." He said that some politicians called the Water Authority "as a courtesy to their constituents," but exerted no real pressure to halt the campaign. Politicians generally felt that, if a new rate increase could be delayed, the effort was well worth it.

After the first few busy weeks, the PWSA kept up its effort at a slower, steadier rate. From a maximum of 12, the number of crews shutting off service dropped to three or four. The

Authority got on a routine of sending out shut-off warnings after a customer had fallen 150 days behind on payments. (Tutsock noted that this relatively long period was due to the PWSA's quarterly billing cycle. If billing were monthly instead of quarterly, the PWSA would probably begin shut-off procedures more quickly.) Some customers who signed payment plans early in the campaign later defaulted on their plans. If the Authority needed to shut off service for a particular customer a second time, the fee rose — from the \$35 charged for the initial shut-off to \$100 for later service cut-offs. All in all, the PWSA carried out about 3,600 actual service shut-offs during the first five months of the campaign.

The PWSA began publishing the names of delinquent customers in the newspaper. One customer who saw his name in the paper came in the next day to pay what he owed. He, however, demanded that the paper publish the fact that he was no longer in debt. A reporter complied, reporting that his \$38,000 in back payments had been paid off. Likewise, some customers whose curb stops had been painted blue demanded that the PWSA eradicate the blue markings, so their neighbors would see they had paid off their debts.

Under prevailing law in Pittsburgh, any debt owed for water service remains with the property. Because of this, the PWSA filed suits to place liens against certain properties for the money owed. For cases where the courts ruled in their favor, the PWSA began trying to collect against those judgments. In some cases, the Authority passed delinquent accounts on to a private collection agency to try to recoup some of the money owed.

One problem the PWSA has not yet figured out how to resolve is cases where several customers share one connection. In some cases — particularly where a row of houses shares a "party line" that runs down the middle of the row — the PWSA cannot isolate delinquent from paying customers. In those cases, the Authority has not yet instituted service cut-offs. In other cases, work crews have been unsuccessful in finding valves or getting them to work. The PWSA is slowly replacing faulty valves.

One side benefit of the effort has been financial records that more accurately reflect the Authority's real financial situation. The PWSA now divides its accounts receivable into two categories — those that officials think the Authority stands a reasonable chance of collecting on, and those it does not. With the Board of Director's approval, these latter debts are written off.

Looking back in early September 1995 on the first few months of the campaign, Greg Tutsock concluded that it had indeed been worth all the effort. Greg calculated that the campaign thus far had generated about \$5 million that would not otherwise have been collected. Over a five-month period, that sum represented a sizeable 20%-25% increase over the \$4-\$6 million per month normally collected. (The PWSA expects to generate about \$62 million in revenue during calendar year 1995.) As a result, the rate increase scheduled for April 1995 has been postponed indefinitely.

*When pressed for advice for other water authority officials considering whether or not to shut off service for delinquent customers, Greg Tutsock thought deeply. He admitted that the decision is a difficult one, but he offered the following insight: "I thought about it this way. Before the campaign, for every one customer who wasn't paying his or her bill, I had seven customers who were. I'd rather keep the seven good customers happy by sparing them a rate increase than keep the one bad customer happy by providing him with free water. And I repeat: our goal was not to shut off service. We wanted to avoid that. Our goal was to increase revenues so we didn't have to raise rates. But I know it's a hard decision."*

### 3.2.4 Other

As noted above, you may think of other components to include in your strategy for improving cost recovery. There may also be other items linked to increasing cost recovery that you will want to consider at the same time. For example: a water provider may wish to try to connect increases in user charges to actual improvements in service quality.

If a loan is possible, improvements in cost recovery may be just one of a series of preconditions for the loan. Completing a capital investment program (CIP) or identifying priority investments through some other process may mark a step in loan preparation. As mentioned above, information provided by a CIP is useful in setting prices at economically "correct" levels.

Use Worksheet 13 to jot down the strategic elements (both listed above and otherwise) that correspond most to your situation.

#### **Worksheet 13:** ***Elements of Strategy for Improving Cost Recovery***

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### 3.3 PUTTING THE ELEMENTS IN ORDER

Now that you have identified the best ways to improve cost recovery, we need to put those elements into a logical order. Institutions often have scarce human resources. If we try to do everything at once, we may end up with nothing. It is often better to take actions one step at a time. Here is some advice on ranking strategy elements:



*Look for a logical order.* What has to happen before something else happens? In Lviv, a technical assistance team recommended that the Vodokanal focus first on setting up an effective enforcement system before increasing its average price per cubic meter (see Mini-Case Study 5). Why? Because if those steps were reversed, customers might refuse to pay higher prices, and the Vodokanal would have no way of enforcing payments.

*Build confidence and capacity by attempting a couple of simple tasks first.* The Pittsburgh example (see Case Study 4) showed that adopting even one piece of a strategy (improving collection rates *by means of* embracing a tough shut-off policy toward delinquent customers) can involve a major effort. As a confidence-building exercise, a service provider may choose to attempt one or two simpler efforts before tackling a difficult initiative.

Confidence-building exercises may be particularly important when more than one entity is involved in providing water service, for example, a vodokanal and a city administration. Large, complex initiatives may require close city/vodokanal coordination. Before launching such efforts, it may be best to first attempt smaller team-building exercises.

*Focus on those actions that will yield the most benefit at the least cost.* Our earlier analysis showed that focusing energies on different customer groups, for example, would yield different benefits (see Worksheets 7 and 9). One could focus first on improving collections from that customer group where the most benefits were possible. For every possible initiative, you may want to list out all the pluses and the minuses.

#### ***Mini-Case Study 5: Ranking Priorities in Lviv***

*After analyzing cost recovery in Lviv (see Mini-Case Study 3), a team helped the Lviv Vodokanal and the City develop a strategy to improve cost recovery. In a simplified form, the three steps for the Vodokanal's part of the strategy were:*

- 1) improve collection/enforcement, while equalizing tariff levels among different customers;*
- 2) increase calculation of total cost used as a basis for setting monthly charges; and*
- 3) make the pricing process more efficient and equitable.*

*The team gave improved collection and enforcement top priority. If Step 2, increasing the average cost per cubic meter, were begun before an effective enforcement system were set in place, the Vodokanal would run the risk of increased defaults on payments. And because cost recovery was so low, improving collections and increasing the average cost per cubic meter should both occur before one focused on fine-tuning the tariff-setting process.*

Now go back to Worksheet 13 and number the elements to put them in a logical order.

### 3.4 ASSIGNING RESPONSIBILITIES AND TARGETS (ACTION PLAN)

As a final step in completing your draft strategy, it is useful to assign responsibilities and targets for the different elements of your strategy. (This step is sometimes referred to as the “action plan.”) This step is critical in helping administrators carry out the strategy.

As in defining objectives, while it is good to be as specific as possible when preparing the action plan, too much detail is unrealistic and counterproductive.

Use Worksheet 14 to assign responsibilities for carrying out the strategy.

#### **Worksheet 14:**

#### ***Action Plan for Improving Cost Recovery***

*Fill out the following items.*

<u>Phase</u>	<u>Strategy Element/Sub-Element</u>	<u>Measurable Target or Action</u>	<u>Person/ Department Responsible</u>	<u>By (Date)</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
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_____	_____	_____	_____	_____
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_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

You may also wish to prepare a flowchart that shows how different activities relate to each other over time.

### 3.5 REFINING AND IMPLEMENTING YOUR STRATEGY

Congratulations! The rough outline of your draft strategy is now found in Worksheets 12, 13, and 14. Your strategy is grounded on the findings developed in Worksheets 1-11. You may wish to assemble highlights from all those Worksheets into one document, and elaborate as necessary. Now comes the tough part — implementing the strategy.

You will first need to review your strategy with other decision-makers from your locale who could not participate in this workshop, and refine the strategy as necessary. After finalizing your strategy, to keep your agency focused on implementation, it may be helpful to form an interdepartmental (or interagency) working group. That group could be chaired by the agency director, and could include directors of all departments identified in Worksheet 14 as playing major roles in implementing the strategy. That group could meet periodically, e.g., every one or two weeks, to review progress made in implementing the strategy and meeting targets. Strategies inevitably evolve as one tries to implement them. Such a working group can naturally revise the strategy as necessary.